

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at line 1 on page 3 and ending at line 2 on page 4 with the following amended paragraph:

According to the present invention, an apparatus for correcting relative positional relationship between an actual video image captured by a camera and a virtual video image for use in a video image display device for superimposing the actual video image and the virtual video image on a monitor screen, includes: actual targets set in an actual coordinate system in an area captured by the camera; coordinate conversion means for theoretically deriving monitor coordinates in a monitor coordinate system on the monitor screen by coordinate conversion of actual coordinates of the actual targets in the actual coordinate system based on reference values of coordinate conversion parameters including internal parameters of the camera itself and attachment parameters for attaching the camera to the vehicle; recognition means for recognizing the monitor coordinates of the image of the actual targets actually captured by the camera; and correction means for correcting at least values of the internal parameters of the camera itself of the coordinate conversion parameters based on deviations between the monitor coordinates of the image of the actual targets actually captured by the camera and the corresponding monitor coordinates in the monitor coordinate system of the actual targets which has been subjected to the coordinate conversion, and correcting relative positional relationship between the actual video image and the virtual video image based on the corrected values of the coordinate conversion parameters: the correction means generating relational expressions the number of which is larger than the number of the coordinate conversion parameters based on the monitor coordinates of the image of the actual targets and the monitor coordinates in the monitor coordinate system of the actual targets which have been subjected to coordinate conversion, the coordinate conversion parameters being corrected such that the square-sum of the

deviations is the minimum; the number of actual targets being determined such that the number of the relational expressions is larger than the number of the coordinate conversion parameters which require correction; the recognition means providing a virtual target in the monitor coordinate system on the monitor screen based on the coordinate conversion parameters before modification using the coordinate conversion means, and carrying out the recognition based on the difference between the monitor coordinate of the image of the actual target captured actually by the camera and the monitor coordinate of the virtual target.

Please replace the paragraph beginning at line 8 on page 4 and ending at line 1 on page 5 with the following amended paragraph:

Further, according to the present invention, a method of correcting relative positional relationship between an actual video image captured by a camera and a virtual video image when superimposing the actual image and the virtual video image on a monitor screen, includes the steps of: capturing actual targets in an actual coordinate system by the camera; theoretically deriving monitor coordinates in a monitor coordinate system on the monitor screen by coordinate conversion of actual coordinates of the actual targets in the actual coordinate system based on reference values of coordinate conversion parameters including internal parameters of the camera itself and attachment parameters for attaching the camera to the vehicle; providing a virtual target in the monitor coordinate system on the monitor screen based on the coordinate conversion parameters before modification and recognizing the monitor coordinates of the image of the actual targets actually captured by the camera based on the difference between the monitor coordinate of the image of the actual target captured actually by the camera and the corresponding monitor coordinate of the virtual target; generating relational expressions based on deviations between the monitor coordinates of the image of the actual targets and the monitor coordinates in the monitor coordinate system of the actual targets which have been subjected to coordinate conversion,

the number of relational expressions being larger than the number of the coordinate conversion parameters to be corrected including at least internal parameters of the camera itself of the coordinate conversion parameters; correcting the coordinate conversion parameters such that the square-sum of the deviations is the minimum; and correcting relative positional relationship between the actual video image and the virtual video image based on the corrected values of the coordinate conversion parameters.